Rejection Under 35 USC § 102

The Examiner cites WO 99/41169 (Stamires, et al) as anticipating claims 1-6, 13, 14, 15 and 17.

Stamires, et al discloses a magnesium and aluminium-containing anionic clay with acetate in its interlayer. As mentioned by Stamires, et al on page 1, lines 7-10, anionic clays have a crystal structure consisting of positively charged layers built up from specific combinations of metal hydroxides between which there are anions and water molecules. In other words: anionic clays are crystalline materials.

Instant claims 1-6, however, relate to quasi-crystalline hydrated magnesium-aluminium hydroxy carboxylates. As evidenced by the enclosed copy of a scientific dictionary (page 1537), the term 'quasi-crystalline' refers to *'a phase of solid matter that, like a crystal, exhibits long-range order and translational order but whose atoms and clusters repeat in a sequence defined by a sum of periodic functions whose periods are in an irrational ratio.* This is illustrated by the figure on the same page.

According to the same dictionary (page 461), a crystal comprises atoms in a regularly repeating pattern. It is built up from crystal lattices by associating with every lattice point an assembly of atoms identical in composition, arrangement, and orientation (page 462, under 'crystal lattice')

In other words, quasi-crystalline materials differ from crystalline materials in their way of ordering. Consequently, the quasi-crystalline materials of the instant claims differ from the crystalline anionic clays of Stamires, et al. The instant claims are therefore novel.

Process claims 7-12 are also novel over Stamires, et al. As mentioned on page 2, lines 27-29, of the instant text, *anionic clays* are typically prepared by reacting a magnesium source and an aluminium source under basic conditions, most typically in the range 8-10 and above. This is in line with Stamires, et al, who uses a pH of 10 in Comparative Examples 2-4.

Stamires, et al discloses on page 14, lines 1-3, that acids or bases may be added to *control* the pH. In other words: to keep the pH at the desired level. If the pH is above the desired level, acid can be added; if it is below the desired level, base will be added. This disclosure by Stamires, et al can therefore *not* be regarded as an inherent disclosure of a pH of 3.5-6.5.

Claim 17 for a catalyst composition comprising the composition of claim 1 is novel as depending from a novel claim and sharing patentability therewith.

Rejections Under 35 USC § 103

It is clear that the Examiner has not stated a *prima facie* case for obviousness. To state such a case the prior art must provide suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference must teach or suggest all the claim limitations. The teaching or suggestion and reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure (MPEP 2143).

There is no teaching or suggestion in Stamires, et al, even to the existence of quasi-crystalline materials. There could be no suggestion or motivation, nor a reasonable expectation of success in Stamires, et al concerning

AMENDED CLAIMS:

1. (original) A composition comprising a quasi-crystalline hydrated magnesium-aluminium hydroxy carboxylate displaying a reflection in the powder X-ray diffraction pattern in the range of 5 to 15 Å.

2. (original) The composition of claim 1 which also comprises a hydrated magnesium hydroxy carboxylate or a hydrated aluminium hydroxy carboxylate or both a hydroxy carboxylate and a hydrated aluminium hydroxy carboxylate.

3. (original) The composition of claim 1 which also comprises an aluminium oxide.

4. (original) The composition of claim 1 wherein the carboxylate is acetate or formate.

5. (original) The composition of claim 1 wherein the magnesium to aluminium molar ratio in the composition ranges from 0.5 to 5.0.

6. (original) The composition of claim 5 wherein the magnesium to aluminium molar ratio in the composition ranges from 0.75 to 5.0.

7. (original) A process for the preparation of the composition of claim 1 wherein a mixture of an aluminium source and a magnesium carboxylate is aged at a pH in the range of from 3.5 to 6.5.

8. (original) The process of claim 7 wherein the magnesium carboxylate is magnesium acetate or magnesium formate.

9. (original) The process of claim 7 wherein the aluminium source is an aluminium salt, pseudoboehmite, amorphous aluminium hydroxide gel powder, or a combination thereof.

10. (original) The process of claim 7 wherein aging occurs under hydrothermal conditions.

11. (original) The process of claim 7 wherein the aging is conducted in two separate steps, one under thermal and one under hydrothermal conditions.

12. (original) The process of claim 7 wherein the process is conducted in a continuous mode.

13. (currently amended) A process for the preparation of ~~an~~a Mg-Al solid solution wherein the composition of claim 1 is calcined at a temperature in the range of 300° to 1200°C.

14. (original) A process for the preparation of an anionic clay wherein the composition of claim 1 is calcined and the calcined product is subsequently rehydrated to obtain an anionic clay.

15. (cancelled)

16. (cancelled)

17. (original) A catalyst composition comprising the composition of claim 1.

18. (new) The process of claim 13 wherein said solid solution is shaped.

19. (new) The process of claim 14 wherein said anionic clay is shaped.

20. (new) A shaped composition of claim 1.